

What is claimed:

1. A laminate with gas barrier properties, characterized in having at least a (I) paper layer, a (II) gas barrier layer, and an (III) epoxy-group-containing resin composition layer, which includes a polyolefin (a) having a melt flow rate of 0.1~100 g/10 min and an epoxy-compound (b) having two or more epoxy groups in the molecule and a molecular weight of 3000 or less, epoxy-compound (b) being added in an amount of 0.01~5 parts by weight with respect to 100 parts by weight of polyolefin (a); wherein a treated surface, in which the melted resin film of said (III) epoxy-group-containing resin composition is surface treated to a degree of oxidation in the range of 0.05~1.0, is laminated to said (II) gas barrier layer's surface which was not treated with an anchor coat agent.
2. A laminate with gas barrier properties according to claim 1, characterized in that said (II) gas barrier layer consists of one of either an inorganic vapor deposited synthetic resin layer or a metal foil.
3. A laminate with gas barrier properties according to claim 1, wherein said polyolefin (a) is a non-polar polyolefin.
4. A laminate with gas barrier properties according to claim 1, characterized in that said epoxy-compound (b) is an epoxidized plant oil.

5. A laminate with gas barrier properties according to claim 1, characterized in that said (III) epoxy-group-containing resin composition layer contains said polyolefin(a), said epoxy-compound (b), and an olefin polymer(c) having functional groups that react with epoxy groups, wherein the amount of olefin polymer(c) is 30 wt% or less with respect to the total weight of polyolefin (a) and olefin polymer (c), and epoxy-compound (b) is added in an amount of 0.01~5 parts by weight with respect to a total 100 parts by weight of polyolefin (a) and an olefin polymer (c).

6. A laminate with gas barrier properties according to claim 5, characterized in that said olefin polymer (c) is a modified olefin polymer or olefin-copolymer having at least one group selected from the group comprising acid anhydride group, carboxyl group, and carboxylic acid metal salts in the molecules.

7. A laminate with gas barrier properties according to claim 6, characterized in that said olefin polymer (c) is an ethylene-maleic anhydride copolymer or an ethylene-maleic anhydride-(meth)acrylate copolymer.

8. A laminate with gas barrier properties according to claim 1, characterized in that a (IV) synthetic resin layer is also provided to said laminate.

9. A laminate with gas barrier properties according to claim 8, characterized in that said (IV) synthetic resin layer consists of a linear low-density polyethylene or an ethylene (co)polymer produced by a high-pressure radical polymerization method.

10. A laminate according to claim 1, characterized in that a (V) impact-resistant resin layer is also provided to said laminate.

11. A laminate according to claim 1, characterized in that a (VI) heat sealing layer is also provided to said laminate.

12. A paper container with gas barrier properties, said paper container consisting of a laminate with gas barrier properties that has at least a (I) paper layer, a (II) gas barrier layer, and an (III) epoxy-group-containing resin composition layer, said (III) epoxy-group-containing resin composition layer including a polyolefin (a) having a melt flow rate of 0.1~100 g/10 min and an epoxy-compound (b) having two or more epoxy groups in the molecule and a molecular weight of 3000 or less, epoxy-compound (b) being added in the amount of 0.01~5 parts by weight with respect to 100 parts by weight of polyolefin (a), wherein that said (II) gas barrier layer is adjacent to said (III) epoxy-group-containing resin composition layer; characterized in that:

    said (I) paper layer is disposed further to the outside of the container than said (II) gas barrier layer and said (III) epoxy-group-containing resin composition layer.

13. A paper container with gas barrier properties according to claim 12, characterized in having a structure in which a (I) paper layer, at least one of a (IV) synthetic resin layer and (III) epoxy-group-containing resin composition layer, a (II) gas barrier layer, and at least one of a (IV) synthetic resin layer and (III) epoxy-group-containing resin composition layer are laminated in order from the outside of the container.

14. A paper container with gas barrier properties according to claim 12, characterized in that said laminate with gas barrier properties also has a (V) impact-resistant resin layer, and said (V) impact-resistant resin layer is disposed adjacent to said (III) epoxy-group-containing resin composition layer.

15. A paper container with gas barrier properties according to claim 12, characterized in that the container has a (IV) heat sealing layer as its outermost and/or innermost layer.

16. A paper container with gas barrier properties according to claim 12, characterized in that said laminate with gas barrier properties also has a (V) impact-resistant resin layer, and in that said paper container with gas barrier properties has a (IV) heat sealing layer as its innermost layer, and said (VI) heat sealing layer is laminated on to said (V) impact-resistant resin layer via said (III) epoxy-group-containing resin composition layer.

17. A production method for a laminate with gas barrier properties, said laminate having at least a (I) paper layer and a (II) gas barrier layer, wherein extrusion molding is used to form as the layer adjacent to said (II) gas barrier layer

a layer consisting of a first resin composition, that contains a polyolefin (a) having a melt flow rate of 0.1~100 g/10 min and an epoxy-compound (b) having two or more epoxy groups in the molecule and a molecular weight of 3000 or less, epoxy-compound (b) being added in the amount of 0.01~5 parts by weight with respect to 100 parts by weight of polyolefin (a); or

a layer consisting of a second resin composition, in which an olefin polymer (c) having functional groups that react with epoxy groups is further added to said first resin composition in the amount of 30 wt% or less with respect to the total weight of polyolefin (a) and olefin polymer (c).

18. A production method for a laminate with gas barrier properties according to claim 17, characterized in that said laminate has a structure in which a (I) paper layer, at least one of a (IV) synthetic resin layer and (III) epoxy-group-containing resin composition layer, and a (II) gas barrier layer, and at least one of a (IV) synthetic resin layer and (III) epoxy-group-containing resin composition layer are laminated in sequence.

19. A production method for a laminate with gas barrier properties according to claim 17, characterized in that said laminate has a (I) paper layer, (II) gas barrier layer, (III) epoxy-group-containing resin composition layer, and, as desired, at least one of a (IV) synthetic resin layer, (V) impact-resistant resin layer, and (VI) heat sealing layer; and in that said extrusion molding is extrusion laminating and/or extrusion sand laminating.

20. A production method for a laminate with gas barrier properties according to claim 17, characterized in that said extrusion molding is extrusion laminating and/or extrusion sand laminating; and in that, during said extrusion molding, a treated surface, in which the melted resin film of an epoxy-group-containing resin composition is subjected to a degree of oxidation in the range of 0.05~1.0 by surface treatment thereof, is laminated to the treated surface of a (II) gas barrier layer that was subjected in advance to in-line surface treatment.

21. A production method for a laminate with gas barrier properties according to claim 20, characterized in that said melted resin film surface treatment is an ozone treatment.